

REMARKS

The Application has been carefully reviewed in light of the Office Action dated August 25, 2004. Claims 1 to 3, 5 to 7, 9 to 11 and 13 to 15 are in the application, of which Claims 1, 5 and 9 are independent. Claims 1, 2, 5, 6, 9 and 10 are being amended, and Claims 13 to 15 are being added. Reconsideration and further examination are respectfully requested.

By the Office Action, Claims 1, 2, 5, 6, 9 and 10 were rejected under 35 U.S.C. § 103(a) over U.S. Patent 5,778,092 (Macleod) and U.S. Patent 5,684,600 (Miyazaki), and Claims 3, 7 and 11 were rejected under 35 U.S.C. § 103(a) over Macleod, Miyazaki and U.S. Patent 6,275,815 (Ida). Reconsideration and withdrawal of the rejections are respectfully requested.

The present invention generally concerns processing pixel data based on characteristics of the pixel data. More particularly, the present invention uses block selection processing to identify characteristics of the pixel data, the result of which is used to determine whether or not to apply black character determination processing to pixel image data.

By virtue of this arrangement, black character determination processing can be selectively performed based on characteristics of the pixel data, resulting in more efficient processing of the pixel data as a whole.

Turning to the specific language of the claims, Claim 1 defines an image processing method, which comprises inputting pixel data of an image, and performing

block selection processing on the pixel data to determine types of pixels within the image. A determination is then made, based on the block selection processing, if a pixel is in an object area of the image. Selectively performing black character determination processing on the pixel, wherein black character processing is performed in a case that the pixel is determined to be in an object area of the image based on block selection processing.

The applied art, namely Macleod and Miyazaki, is not seen to disclose or to suggest selectively performing black character determination processing, wherein the black character determination processing is performed in a case that a pixel is determined to be in an object area of an image based on block selection processing.

It is conceded in the Office Action that Macleod fails to disclose performing black character determination processing. Therefore, Macleod is not seen to disclose or to suggest selectively performing black character processing based on whether a pixel is determined to be in an object area of an image based on block selection processing.

Miyazaki is not seen to remedy the deficiencies of Macleod. Miyazaki is understood to describe image processing hardware that includes black character area determining circuit 11. (See Miyazaki, Figures 3 and 5.) Even if the black character area determining circuit 11 is used to perform black character processing, it should be understood that Miyazaki fails to show selectively performing black character processing on a pixel, wherein black character determination is performed in a case that the pixel is determined to be in an object area. Miyazaki is instead understood to process each pixel and is not seen to selectively process a pixel based on whether or not the pixel is within an

object area of an image.

In fact, the Office Action is not seen to at all address the feature of the present invention wherein black character determination processing is selectively performed on a pixel in a case that the pixel is determined to be in an object area of an image based on block selection processing, and this feature is not seen to be disclosed by either MacLeod or Miyazaki.

Ida has been carefully reviewed and is also not seen to disclose or to suggest at this feature of Claim 1.

Therefore, for at least the foregoing reasons, Claim 1 is believed to be in condition for allowance. Further, Applicant submits that Claims 5 and 9 are believed to be in condition for allowance for at least the same reasons.

The remaining claims are each dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In this regard, dependent Claim 2 has, among its features, the feature of performing block selection processing on pixel data of a first resolution and performing the black character determination processing on pixel data of a second resolution, wherein the second resolution is higher than the first resolution. Thus, the block selection processing uses a lower resolution than the black character determination processing.

The Office Action cites col. 1, lines 49 to 60 of MacLeod, as allegedly

disclosing the above-identified a feature.

However, MacLeod, including the portion of MacLeod cited in the Office Action, is seen to describe a technique for compressing color or gray scale documents by representing the document image using three planes: a reduced-resolution foreground plane is used to represent color or gray scale information of foreground items such as text, a reduced-resolution background plane is used to represent color or gray scale information of background items, and a high-resolution binary selector plane is used to select a pixel value from either the foreground or background plane during decompression. Each of the planes is then compressed using a compression technique to optimize compression. See col. 1, lines 46 to 67.

The data compression performed by MacLeod is not seen to in any way be equivalent to the selective black character determination processing of the present invention. In fact, the Office Action even concedes that MacLeod fails to disclose black character determination processing. MacLeod is seen merely to perform a compression on a representation of a scanned document which consists of reduced-resolution foreground and background planes and a high-resolution binary selector plane.

Thus, MacLeod cannot fairly be seen to disclose use of first resolution pixel data to perform block selection processing and use of second resolution pixel data to perform black character determination processing, wherein the second resolution is higher than the first resolution. Nothing in Miyazaki is seen to disclose use of first resolution pixel data to perform block selection processing and use of second resolution pixel data to

perform black character determination processing, wherein the second resolution is higher than the first resolution. Thus, any combination of MacLeod and Miyazaki, if any combination is proper, cannot fairly be seen to disclose use of first resolution pixel data to perform block selection processing and use of second resolution pixel data to perform black character determination processing, wherein the second resolution is higher than the first resolution.

Ida has been carefully reviewed and is also not seen to disclose the feature of performing block selection processing on pixel data of a first resolution and performing the black character determination processing on pixel data of a second resolution, wherein the second resolution is higher than the first resolution.

Accordingly, Claim 2 is seen to be patentable over MacLeod, Miyazaki and Ida, taken alone or in any combination, if any such combination is even permissible. In addition, Claims 6 and 10 are believed to be in patentable for at least the same reasons.

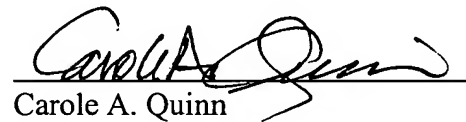
New Claims 13 to 15 have, among their features, the feature of selectively performing black character determination processing, wherein the black character determination processing is not performed in a case that the pixel is determined to be outside an object area of the image based on block selection processing. The applied art, namely MacLeod, Miyazaki, and Ida, when taken alone or in any permissible combination thereof, if such combination even exists, is not seen to disclose or suggest this feature. Accordingly, Claims 13 to 15 are believed to be patentable over the applied art.

In view of the foregoing, the entire application is believed to be in condition

for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should be directed to our address given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Carole A. Quinn", is written over a horizontal line.

Carole A. Quinn
Attorney for Applicant
Registration No.: 39,000

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-2200
Facsimile: (212) 218-2200

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